The Totally Integrated Automation Portal (TIA Portal) enables complete access to the entire digitalized automation, from digital planning and integrated engineering to transparent operation. As part of the Digital Enterprise Software Suite, it joins PLM and MES in rounding out the comprehensive offering from Siemens for companies on the path to Industrie 4.0, making it the perfect access to automation in the Digital Enterprise.

With the TIA Portal, machine builders and system integrators as well as plant operators will benefit from:
- shorter time to market thanks to innovative simulation tools, among other things
- increased plant productivity thanks to additional diagnostic and energy management functions
- greater flexibility thanks to coordinated teamwork

TIA Portal – more than an engineering framework
Open, virtual and connected

Digital workflow with TIA Portal

“The ability to simulate machines gives me security in design, security in sales and security in machine configuration.”
Rainer Feuchter, CEO Optima Consumer GmbH

**Flexible simulation**
By simulating the entire installation, including the controller and HMI, and by evaluating it based on a virtual model, local commissioning time is reduced thanks to PLCSIM Advanced, the controller’s digital twin.

**Seamless connectivity**
The cloud offers new possibilities in engineering as well as for the operation of plants. The TIA Portal Cloud Connector makes it possible to work with the TIA Portal regardless of the location or device. For you, this means greater flexibility and less installation effort. During operation, you can benefit from additional digital services thanks to the connection of plants to the Siemens MindSphere Cloud.

**Open system**
TIA Portal allows you to efficiently create your project using software generators, thus reducing the number of redundant workflows. With Teamcenter, you also merge the project versions from planning, engineering and design.
Shorten your time to market

Integrated engineering with TIA Portal

“You work with a team-enabled, fully integrated tool landscape with access to a complete portfolio of necessary control and drive components.”

Andreas Martin Linck, Head of E-Technik

One for all
With TIA Portal, you integrate all important components of your automation project: safety, security, control, HMI, drives, distributed I/O and now even motion control and power distribution. With only a few multiple entries, a shared database and a standard interface across all tasks, your engineering time is reduced.

Coordinated teamwork
With TIA Portal Multiuser Engineering, multiple people can access a project at the same time. Synchronization is automatic. You can flexibly process tasks and complete them simultaneously – both device-oriented and task-based.
**Reliably avoid errors**
You reduce the amount of extra work by reliably identifying errors and quickly correcting them with numerous programming code templates. Many new and efficient diagnostic tools as well as cyclical system test recordings provide help in analyzing sporadic errors during commissioning.

**Generation instead of programming**
Develop your solutions even faster thanks to automatic generation of HMI visualization with SiVArC, fast and easy machine and plant diagnostic, efficient energy management system implementation as well as automatic program creation using software generators that are linked via the TIA Portal Openness interface.

**Handle know-how safely and efficiently**
Thanks to the comprehensive library concept, you can easily reuse all project objects and thus avoid extra work. Safeguard your specialist knowledge over the long term with know-how-protected blocks, and easily further develop existing systems and projects in TIA Portal.
Increase your productivity

Transparent operation with TIA Portal

“A standard engineering platform is desirable for engineering energy efficiency systems: consistently from the device to the configuration to data storage, all the way to the customer’s desk.”

Stephan Vömel, Proprietor and managing director, Quintec Automatisierungs- und Datentechnik GmbH

Information management

The greatest possible transparency through consistent data storage in production lets you make the right decisions quickly. You can prepare data according to specific target groups with the SIMATIC Information Server locally or on a mobile device when you are in the field. The system supports WinCC/WebUX as well as WebNavigator for remote access and control.

Energy management

The integrated SIMATIC Energy Suite automation solution and the universally connected Energy Manager PRO energy management system help you get a handle on your energy costs at all times. The Energy Suite makes energy data record easy and efficient and gives you the transparency you need to save energy according to ISO 50001.
**Diagnosis management**

Efficient and integrated diagnosis of process errors reduce production downtimes and increase the availability of your machines and plants. The standardized ProDiag machine and plant diagnostic function gives you efficient analyses of process errors. Integrated system diagnosis helps you quickly identify errors in the automation system across all system components.

**User management**

Efficient user management is a key part of every security concept. User management in the TIA Portal enables system-wide, central maintenance of users, including an optional connection to Windows Active Directories. The person-specific assignment of roles and authorizations minimizes maintenance effort while achieving a high degree of transparency. This provides a solid foundation for efficient and consistent administration of personalized access rights in the plant, which significantly reduces security risks.

**Open communication**

Connecting automation and IT level by means of open communication makes it easy to integrate higher-level MES/ERP solutions. The standardized OPC UA communication protocol lets you forward production data to systems of other manufacturers. Industrial Data-Bridge is used for bidirectional, cross-system communication via standard interfaces, without any programming work.
Digitalization and the TIA Portal cluster

TIA Portal options provide answers to customer requirements

<table>
<thead>
<tr>
<th>TIA Portal options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SIMATIC S7-PLCSIM Advanced</strong> &lt;br&gt;Comprehensive simulation of the controller functionality including interaction with virtual plant and machine models</td>
</tr>
<tr>
<td><strong>SIMATIC ODK 1500S</strong> &lt;br&gt;Supports the development of Windows and real-time functions and provides for the integration of high-level languages</td>
</tr>
<tr>
<td><strong>SIMATIC OPC UA</strong> &lt;br&gt;Open communication standard for the communication concepts of Industrie 4.0</td>
</tr>
<tr>
<td><strong>TIA Portal Cloud Connector</strong> &lt;br&gt;Boost the flexibility in your daily work through engineering in your private cloud</td>
</tr>
<tr>
<td><strong>SIMATIC STEP 7 Safety</strong> &lt;br&gt;Provides for the seamless integration of machine safety into the SIMATIC automation system</td>
</tr>
<tr>
<td><strong>SIMATIC Energy Suite</strong> &lt;br&gt;Energy transparency in production thanks to automatic creation and intuitive configuration</td>
</tr>
<tr>
<td><strong>TIA Portal Teamcenter Gateway</strong> &lt;br&gt;Safeguarding projects plant-wide with the storage of TIA Portal projects in Teamcenter</td>
</tr>
<tr>
<td><strong>SIMATIC Visualization Architect SiVArn</strong> &lt;br&gt;Implement standardized HMI visualizations with even greater efficiency through automatic generation</td>
</tr>
<tr>
<td><strong>SIMATIC ProDiag</strong> &lt;br&gt;Diagnosis of application errors reduces production downtimes and increases the availability of your machines and plants</td>
</tr>
<tr>
<td><strong>SIMATIC Target 1500S for SIMULINK</strong> &lt;br&gt;The software development can be integrated directly into the STEP 7 program through the automatic generation of executable code</td>
</tr>
<tr>
<td><strong>TIA Portal Multiuser Engineering</strong> &lt;br&gt;Work together on a project as a team and manage it flexibly on a server. Centrally track changes with user comments and versions in one location</td>
</tr>
<tr>
<td><strong>SIMATIC OPC UA</strong> &lt;br&gt;Open communication standard for the communication concepts of Industrie 4.0</td>
</tr>
<tr>
<td><strong>WinCC/WebUX</strong> &lt;br&gt;Diagnosis of application errors reduces production downtimes and increases the availability of your machines and plants</td>
</tr>
<tr>
<td><strong>TIA User Management Component</strong> &lt;br&gt;Reduction of security risks thanks to the efficient and consistent administration of personalized access rights in the plant</td>
</tr>
</tbody>
</table>

Open, virtual, and networked Digital workflow with TIA Portal

Shorten your time to market Integrated engineering with TIA Portal

Increase your productivity Transparent operation with TIA Portal

*Part of WinCC Runtime Professional

Options

Intro Added values Options Easy access to the TIA Portal Software packages and options
### Easy access to the TIA Portal

**Action packages**

<table>
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<th>Trial user</th>
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<tbody>
<tr>
<td>TIA Portal V14 TRIAL download collections</td>
</tr>
<tr>
<td>Trial period: limited (21 days)</td>
</tr>
</tbody>
</table>

**Upgraders**

| Software – STEP 7 V5.5 to SIMATIC STEP 7 Professional V15 Combo |
| Scope: Upgrade and power pack from STEP 7 V5.x to STEP 7 V15 Professional / Prof. 2017; SUS contract also required |
| **Product no.**: 6ES7822-1AE05-0XC2 |
| **SUS product no.**: 6ES7810-5CC04-0YY2 |
| Trial period: unlimited; prerequisites: STEP 7 V5.x license, STEP 7 V5.5 SUS |
| **Important**: The package is linked with a mandatory SUS contract. |

**First-time users**

| Starter kit with S7-1500 hardware |
| The starter kit includes everything you need to immediately put the high-performance SIMATIC S7-1500 into use. |
| [www.siemens.com/s7-1500-starter-kits](http://www.siemens.com/s7-1500-starter-kits) |

| Starter kit with S7-1200 hardware |
| With the SIMATIC S7-1200 starter kits, you can quickly and easily implement your simple automation tasks. |
| [www.siemens.com/s7-1200-starterkits](http://www.siemens.com/s7-1200-starterkits) |

| Starter kit with Comfort Panel hardware |
| With high-resolution wide-screen displays ranging from 4” to 22” and the option of touch operation or operating buttons, the starter kits include everything you need to use the hardware. |
| [www.siemens.com/comfort-panel-starter-kits](http://www.siemens.com/comfort-panel-starter-kits) |

| Software – SIMATIC STEP 7 Professional V15 power pack: V15 Trial 365 → V15 (download) |
| After you purchase the SIMATIC S7-1500 starter kit, you can convert the included 365-day license to a full license of the same version with a power pack. |
| **Product no.**: 6ES7822-1BE05-0YC5 |
| Prerequisites: S7-1500 starter kit |

**Temporary use**

| SIMATIC 50-h engineering license for infrequent use of the software (rental license) |
| **Scope**: STEP 7 Professional (TIA Portal & 2017), WinCC Professional (TIA Portal & WinCC flexible 2008), STEP 7 Safety Advanced (TIA Portal & Distributed Safety) |
| **Product no.**: 6ES7823-1GE05-0YA5 |
| Trial period: 50 hours of actual use |
Intro

Added values

Options

Software packages and options

Good to know

**Software Update Service (SUS)**
With the Software Update Service, you automatically receive all released versions of the software you use delivered right to your door – in other words, all upgrades and service packs.
www.siemens.com/SUS

**Online Software Delivery (OSD)**
The clever alternative to traditional software delivery! Downloading automation software reduces your administrative expense and storage costs, and ensures simple, reliable, and always clearly organized license management.
www.siemens.com/OSD

Your step into the future – migration made easy

**Supporting documents and tools for migration**
Migration to the TIA Portal is supported with several powerful tools and helpful documents, which you can simply download.
- TIA Portal readiness check tool: Check quickly and easily whether the hardware contained in your projects is supported by the TIA Portal. Readiness-check (weblink)
- Compatibility tool: The tool allows you to assemble a compatible selection of software products or to check existing configurations for compatibility.
www.siemens.com/kompatool

**Individual modernization support**
On request, Siemens can provide you with personal support for very specific requirements:
www.siemens.com/industry/contact
www.siemens.com/fa-services
From consultation and implementation to final project completion, Siemens offers comprehensive modernization services:
www.siemens.com/fa-migration
Details are available at:
www.siemens.com/tia-migration

**Documentation**
Migration guides (weblinks)
- From SIMATIC S7-300/400 to S7-1500
- From SIMATIC S5 to S7-1500
- From SIMATIC WinAX RTX to S7-1500 Software Controller

On the path to the digital enterprise – discover your potential with training courses for SIMATIC S7-1500 training in the TIA Portal

Industry is undergoing rapid developments that are being further accelerated by digitalization. The technologies today are so complex that continuous education and regular courses on training equipment are essential in order to keep skills up to date. We offer you product training tailored to match all topic areas so that you can get the most from the capabilities of the extensive SIMATIC range of products. The training covers the entire life cycle of your plant. SIMATIC S7 service and programming training form the core of product training. The course content covers not only the main topics of SIMATIC S7-1500 in the TIA Portal but also includes programming languages, operator control and monitoring systems, drive technology, industrial communication and safety technology.
www.siemens.com/sitrain-tiaportal
Siemens automation tasks
Efficient automation begins with efficient engineering. Consistent, end-to-end engineering enables savings with regard to time, costs, and effort. Based on specific tasks, our web tutorials show you how you can reduce your project planning time in your daily work. In addition, you can increase the profitability of engineering projects and improve your competitiveness. We ensure that step by step, you will arrive at a result in less than 10 minutes. We offer you a total of nine topics with more than 50 web tutorials. These include:

- TIA digitalization use cases
- Automatic generation of HMI visualizations with SiVArC
- Efficient teamwork with TIA Portal Multiuser
- Open communication standard OPC UA with SIMATIC S7

www.siemens.com/automation-tasks

TIA Portal Tutorial Center
The TIA Portal Tutorial Center gives you an overview of the functions and tools in the TIA Portal as well as how the configuration and programming tools work smoothly together. The tutorials are aimed at planners and project engineers as well as commissioning and service personnel. The videos mainly cover technical content and provide assistance for all stages of the machine and plant lifecycle. These include:

- Explanations regarding the SIMATIC S7 architecture
- Introduction to the programming languages
- Introduction to standardization with the TIA Portal libraries

www.siemens.com/tia-portal-tutorial-center
## Software packages and options

<table>
<thead>
<tr>
<th>Scope of services</th>
<th>SIMATIC STEP 7/STEP 7 Safety</th>
<th>SIMATIC WinCC</th>
<th>SINAMICS Startdrive</th>
<th>SIMOTION SCOUT TIA</th>
<th>Soft Starter ES/SIMOCODE ES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Controller – SIMATIC S7-1500 and SIMATIC S7-300/400 (F)</td>
<td>Software Controller – SIMATIC S7-1500 (F)</td>
<td>SCADA</td>
<td>Convenient, guided acceptance of the Safety Integrated functions of the G120</td>
<td>SIMOTION D</td>
<td>Additional access via PROFIBUS/PROFINET</td>
</tr>
<tr>
<td>Basic Controller – SIMATIC S7-1200 (F)</td>
<td></td>
<td>Single PC workstation</td>
<td>Commissioning, optimization, and diagnostics: G120 family, G130, G150, S120, S150, and medium voltage</td>
<td>SIMOTION P</td>
<td>Additional graphic parameterization and extended diagnostics</td>
</tr>
<tr>
<td>Distributed Controller – SIMATIC ET 200 CPUs (F)</td>
<td></td>
<td>Comfort Panels and Mobile Panels</td>
<td></td>
<td>SIMOTION C</td>
<td>Additional online functions via SIRIUS PtP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basic Panels</td>
<td>V90 PROFINET</td>
<td>SINAMICS S120</td>
<td>List parameterization via PN/PB; parameterization during start-up</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STEP 7 integrated Basic (free) Advanced</td>
<td></td>
<td>STEP 7 integrated Basic Standard Premium</td>
</tr>
</tbody>
</table>
### Options

#### TIA Portal Multiuser Engineering
- TIA Portal Teamcenter Gateway
- TIA Portal Cloud Connector

#### SIMATIC Energy Suite ES
- SIMATIC S7-PLCSIM Advanced
- SIMATIC STEP 7 Safety
- SIMATIC ODK 1500S
- SIMATIC Target 1500S for SIMULINK

#### SIMATIC Visualization Architect

#### Runtime options
- SIMATIC ProDiag
- SIMATIC Energy Suite RT
- SIMATIC OPC UA
- WinCC/WebUX
- TIA User Management Component